Attachment 1

ER NCO COMMUNICATION 94-02

OFFICE OF ENERGY RESEARCH
LESSONS LEARNED FROM ENVIRONMENTAL ASSESSMENT REVIEWS

I. PURPOSE AND SCOPE OF THIS GUIDANCE DOCUMENT

The following comments are a compilation of those received on the last 12 Energy Research (ER) Environmental Assessments (EA) that were approved by the Department of Energy's Office of Environment, Safety and Health (EH) and Office of General Counsel (GC). These were comments made by EH and GC on the draft and final versions of the EAs. Four of the EAs were completed after ER issued the Office of Energy Research Guidance on the Preparation, Scope, and Content of Environmental Assessments (ER NCO Communication 92-04)[1] on November 5, 1992.

Incorporating these Lessons Learned into future EAs will save time, should reduce review time and save resources.

II. GENERAL COMMENTS RECEIVED ON DOCUMENTS

When writing the EA remember that it is a document for public use and that the National Environmental Policy Act (NEPA) as implemented by the Council on Environmental Quality Regulations requires that the EA language be clearly understandable[2,3] to the public (40 CFR 1502.8). The descriptions of the potential impacts, their significance, and the technical concepts presented should be clear and comprehensible. Explain and/or define any technical terms[4], and symbols which would be understood by a professional EA reader or reviewer, but not by the general public. Jargon should not be used.[2,3]

The preparer should not assume that the EA readers will be familiar with the functions and typical operations of a proposed project or facility. Avoid unnecessary qualifying language that could be misunderstood. For example, the statement "No radioactive wastes would be produced during operation," could raise the question of whether such wastes might be produced during the facility's non-

operating hours. The phrase "during operation" is unnecessary and should be deleted.

The documents need to be edited to reduce as much of the technical language as possible. Extensive use of technical language in this document might impart a sense that the proposed project would include more than the construction of a building for a relatively low-risk facility amid similar buildings with similar activities.

Use "would" instead of "will" when describing the proposed project.[5] The use of "will" implies that a decision has already been made to proceed with the project in advance of the EA. Every time the acronym for the proposed project or the words "project," "site," "facility," "building," and "construction" are used to describe it, they should be preceded by the word "proposed."

Every acronym and abbreviation should be defined (written out) in the EA's text the first time it is used, even if a glossary is provided. This is required for all acronyms, units of measurement such as "Ci" for curies, chemical symbols such as "H" for hydrogen, and even such common symbols as "ft" for feet, or "Ref." for reference. Use correct capitalization for acronyms (e.g., "LCF," not "lcf," for "latent cancer fatality"). Define (write out) an acronym only once in the document. An acronym should not be defined if it will never be used. An acronym should not be used in the table of contents or in a section title.

III. EDITORIAL AND FORMAT COMMENTS RECEIVED

The year, office, or funding type should not be included in the title (e.g., "Environmental Assessment for the Fusion Energy General Plant Project..," not, "Environmental Assessment for the Fiscal Year 1990 Fusion Energy General Plant Project...").

Avoid successive indentation of sections and subsections, which results in inefficient page layout and a greater number of pages.

"Pre-decisional Draft" notations should be placed only on the EA's cover sheet, not on the EA's pages. Remove the notation when the

draft EA is submitted to EH.

Remove the word "draft"from the EA when it is submitted for final approval.

Check the grammar and the spelling.[6]

IV. SECTION SPECIFIC COMMENTS RECEIVED

1. DOCUMENT SUMMARY:

The introductory section should clearly identify the project location by site or institution and city/state.

"Pass-through" language should not be used for projects that have received specific Congressional appropriations. Congressional action or direction does not obviate the need for a NEPA review. For these EAs, use the language "Congressionally initiated" actions and follow the Chicago Operations Office guidance.[7]

If some facets of a project have proceeded in advance of the EA (e.g., grants made, construction begun), the EA should reflect the project's current status. Past tense language should be used and completion dates given where appropriate. The word "proposed" should not be used to describe actions or funding that have already taken place. Actions awaiting the completion of a NEPA review (e.g., building occupancy and operational impacts) should be specifically identified, using the word "proposed" and the future tense.

2. PURPOSE AND NEED:

This section should be brief. State the agency's problem or need that would be fulfilled by the proposed action. If it is necessary to refer to the proposed project in this section, only use its name. Include detailed descriptive information about the proposed project in the "Description of the Proposed Action" section instead.

Be objective and factual. The preparer should not try to demonstrate the desirability of the proposed project.[8]

Follow EH's recommendations[9] for presentation of this section.

3. PROPOSED ACTION:

If the proposed action would cause the construction of another facility (e.g., a parking garage), then the environmental impacts associated with erection of the second facility should be included in the EA. Describe the additional facility in this section.

Actions that may be related to the proposed action need to be carefully considered and fully described (e.g., if the new facility is to replace older ones, the decommissioning of the obsolete facilities may be a related action; if a new facility will bring several existing operations under one roof, the impacts of reutilization of the former facilities have to be considered).

Preferred language for the opening sentence in this section is "DOE is proposing to fund (to build)..."

Describe the proposed action in sufficient detail so that the scope is clear and the potential impacts can be identified.[10]

4. PROJECT DESCRIPTION:

For large or complex projects/facilities, include descriptions of each part or component. For example, the EA for a proposed

radiopharmaceutical production facility that includes a chemistry laboratory should include a separate description of the proposed chemistry laboratory.

Include numerical data wherever relevant since these provide important information about the magnitude of a project's impacts and indicate a thorough assessment. For example, if utilities would be relocated for the project, state the linear length of the relocated utilities.

If the proposed action would require the construction of another facility or facilities, then these facilities should be described in this section.

5. NO ACTION ALTERNATIVE:

For research projects, this section should be supported with the most likely socioeconomic impacts that would occur if the no action alternative were followed. For example, for a cancer research facility, the impact would be the cancer research that would not be performed at the proposed project and the resultant advantages lost to humanity.

Identify any impacts associated with the proposed action that would not occur under the no-action alternative, and indicate that the current conditions would prevail. Vague statements that cannot be substantiated should not be used; use precise language such as "current operations would continue under existing management practices and conditions."[11]

The preferred language for the opening sentence in this section is "Under the no-action alternative, ..."

6. ENVIRONMENTAL IMPACTS:

The descriptions of the impacts should be both quantitative and qualitative. Avoid sweeping and generalized conclusions that could imply a lack of thorough consideration or analysis. (e.g., state, "the impacts are expected to be minimal," not "these potential environmental impacts....are not believed to be important").

Impacts from connected, cumulative, and similar actions need to be analyzed, including direct and indirect impacts.[12]

Tell the entire story. For example, if the parts of an accelerator would be recycled, discuss not only the non-radioactive and radioactive reusable parts but also the disposition of the radioactive non-reusable parts.

Be sure to include all environmental impacts and proposed mitigative measures. For example, if hydraulically operated equipment is to be installed on the site, discuss the installation and the applicable standards and measures taken to prevent and minimize the impact of hydraulic leaks.

Describe all mitigation measures (even standard practice measures) that would be used to reduce the effects on the environment (e.g., the use of hay bales to control runoff sedimentation). For wetland replacement, describe the type, and acreage for both the old and new wetland, and the timing of the new wetland project. Provide a figure showing the old and new wetlands.

A discussion of the irreversible and irretrievable commitments of resources which the proposed project would involve should it be built, should be included.

Discuss any regulatory requirements and discuss how compliance would be achieved. Describe any existing federal and state permits. Reference any Federal Register notices but they should not be incorporated into the EA.

When a law or regulation is cited, use the language in the statute; it should not be paraphrased. Demonstrating an understanding of and compliance with the regulation is the primary goal. For example, the sentence "When radioactivity decays to background levels, it will be disposed of as ordinary chemical waste in accordance with the Resource Conservation and Recovery Act" should read, "When radioactivity decays below regulated levels, it will be stored, transported, and disposed of as hazardous waste in accordance with the requirements of the Resource Conservation and Recovery Act."

The absence of significant impacts should be compared to current conditions (e.g., use "no material change" rather than "no measurable cumulative effects").

Be concise (e.g., "minimize siltation and erosion," not "minimize erosion and the transport of soil into storm sewers or beyond the limits of the work area").

Quantify what is considered excessive (e.g., "noise exceeding 90 decibels," not "excessive noise").

A. Conflicting and/or Inaccurate Statements:

Make sure that the statements in the EA agree.[13] For example, if sanitary waste will be discharged into an existing sewer

system, the "improper disposal of sanitary wastes" should not be cited as a potential impact of the project. Or if the site "has been investigated and found to be free of radioactive contamination," the statement that "the project plans to remove and test soil for radioactivity" is inconsistent.

Make sure that numerical values are consistent throughout the EA. For example, if the square footage of each section of a building is cited, then the sum of the sectional square footage should equal the total square footage.

Make sure that the technical data agree. For example, if it is stated in the EA that "airplane flights will not occur below 1,000 feet," the "effects of flights at 500 feet" should not be discussed. Or, if it is stated that "no wetlands were found," do not show wetlands on a figure.

Units should be accurately stated (e.g., if "cubic yards," are the unit of measure, make sure that "yards" are not stated).

Inconsistent use of qualifiers can result in conflicting and confusing information (e.g., stating in one section that "no reliable source" exists, and stating in a later section that there is "no source" for the same material).

B. Words and Phrases:

The words and phrases on the table on the next page, include the problem areas most noted in the EAs reviewed by EH. Some of the items were mentioned (either above or below) but were included in the table to provide a useful reference for the EA preparer.

LANGUAGE FOR THE ENVIRONMENTAL ASSESSMENT

WRITE	DO NOT WRITE
"would[5]" (when describing the proposed project)	"will"
"proposed project" "proposed site" "proposed facility" "proposed building" "proposed construction" (to describe the project[14])	"project" "site" "facility" "building" "construction"

"there will be minimal impact" (there is always an impact[15])	"there will be no impact" (unless it can be definitely proven) "the impact is insignificant"[15,16] (never)
"the impact is found to be acceptable" (avoid using "acceptable"[17])	"the impact is acceptable"
"affect" (use as a verb)	"impact" (do not use as a verb)
"species" (for plants and animals)	"resources"
"lower than" (for comparisons)	"reduced"
"is not expected to affect"	"will not affect" (unless it can be definitely proven)
"extreme risk analysis" (refer to the ER Handbook[18] for other phrases)	"worst case analysis"
"removing and disposing of" (for all wastes)	"removing"
"construction debris" (adequate description)	"normal construction debris" (imprecise and unnecessary description)
"facilities that cannot provide adequate working conditions" (be specific)	"inadequate facilities"
"does not meet fire, life, and safety codes" (reference specific standards)	"does not provide basic personal comfort or modern safety features, such as fire-resistant materials" (vague and subjective)
"materials would be removed and the site restored" (emphasize what would be done)	"materials would be removable and the site restorable" (not what could be done)
"collected and disposed of in accordance with (FILL IN THE BLANK) regulations," (reference specific regulations)	"properly collected and disposed of"
"potential Greenhouse Effect") (use "potential" for programs of study)	"Greenhouse Effect"

C. Radioactive and Hazardous Wastes:

Disposal methods for radioactive and hazardous wastes that would be generated by the proposed action should be specifically identified. If the proposed action is the construction of a new facility, then this would include all construction waste and wastes expected from the facility's future operation.

If the proposed project would involve the generation and/or storage of radioactive, hazardous, or mixed wastes, complete and detailed information about these materials should be presented (e.g., types and volumes that would be generated/stored; description of storage area(s), permits or licenses, and capacities; and potential radioactive exposures and/or health effects for personnel working with the waste). If applicable, provide quantitative estimates of current radiation doses for affected persons. Dose conversion factors should be taken from NRC's "Standards for Protection Against Radiation," 56 FR 23363 (May 21, 1991), or EH's recommendations.[19]

For radiation exposures, specific dose should be described. Make sure that it is clear to the reader whether the dose discussed is a single dose from a specific source, or the combined dose from all sources.

When the term "nearest off-site receptor" is used, the "site" should be defined and the off-site receptor's point of reference should be identified. The distance from the reference point to the receptor should be stated.

D. Environmental Impacts of Operations:

In each subsection, the current site operations should be described first, including a description of any treatment and abatement systems, any existing permits and permit limits, current waste loads (quantities), etc. Second, the estimated change from the proposed project should be described. Third, the impacts of the projected changes should be described. The discussion of the impacts should include current capacity of the disposal system/process/acceptance firm, and the ability of the system/process/acceptance firm to accommodate the additional

waste over the life of the proposed facility.

The analysis of the cumulative impacts should include how or if the proposed project would interact with other facilities in the immediate area, and the impacts of these combined operations.

The EA should consider the project's potential impacts on all affected individuals, not just on the workers involved in the project. This includes specific or unique populations which may be more sensitive to the project's impacts (e.g., if a construction site is near a hospital, the effect of noise on the hospital patients and staff (as well as on the construction workers) needs to be evaluated).

All impacts of the proposed action, no matter how slight, should be discussed (e.g., the increased risk of accidents that may result from increased use of a new or renovated facility). Slight impacts should be discussed only to the extent necessary to rule them out.

E. Socioeconomic Impacts:

This section should include the number of construction workers, new employees, and facility users/visitors expected at the proposed project.
Subjective predictions of public attitudes that are not based on documented facts should not be included (e.g., "There are and would be no controversial public issues related to this project"). The NEPA EA process is the avenue by which public input is sought; it is premature to state in the EA that there is no controversy associated with the proposed project.

F. Conclusions:

Conclusions and language that should be reserved for the Finding of No Significant Impact (FONSI) document, should not be included in the EA[15,16]. For example, "The second alternative is programmatically unacceptable," should not be stated in the EA. Or, "The evidence and analysis contained herein proves that the cumulative impacts of the proposed project are insignificant," should be changed to read,"The evidence and analysis contained

herein suggest that the cumulative impacts of the proposed project would be minimal."

G. Relationship of the Proposed Action to Other Actions:

When assertions are made that an activity is covered under existing NEPA documentation, the cited NEPA documentation should be current and applicable. For example, the assertion that proposed radiopharmaceutical research is covered under a 1976 EA may not be correct, since several of the radioisotopes that would be used for the new research were not available at that time.

6. PERSONS AND AGENCIES CONSULTED:

Include a list of Regulatory Agencies Consulted; if there are no entries, then state so.

The list should include only the persons/agencies outside the DOE organization that were contacted to prepare the EA. DOE contractors who helped prepare the EA should not be listed.

List not only the names of the Agencies, but also the names and titles of the people contacted.

7. REFERENCES:

Include a References section; if there are no entries than state so.

List the references in the order in which they were cited in the EA.[20]

If a DOE Order is used as a criterion in the EA text, then list it in the references.

For each reference (i.e., reports, letters, memos, etc.), state the subject; the firm, person, or organization that prepared the document; and the titles of the author(s) and the recipient.

When a letter and its attachments are used extensively as a reference, list not only the letter but also the attachments by title and subject matter.

8. ATTACHMENTS:

Attach copies of all letters and/or determinations from federal and state agencies that are referenced in the EA.

9. FIGURES:

The final figures should be legible and well defined, with proper titles and legends. The figures should have a North arrow (pointing to the top of the page), a graphically shown scale, and identification of the proposed site (circled with a heavy, dark line). The figures should stand alone.[21]

The word "proposed" should be placed before the word "site" when used in the figure's title and for identification of the proposed project on the figure.

V. REFERENCES

1. Office of Energy Research, National Environmental Policy Act Handbook, Guidance and Procedures, Section 5.2 Preparation, Memorandum from J. Farley transmitting ER NCO Communication 92-04, Subject: Office of Energy Research Guidance on the Preparation, Scope, and Content of Environmental Assessments.

2. Office of Energy Research, National Environmental Policy Act Handbook, Guidance and Procedures, Section 5.2 Preparation, Memorandum from J. Farley transmitting ER NCO Communication 92-04, Subject: Office of Energy Research Guidance on the Preparation, Scope, and Content of Environmental Assessments, second attachment, DOE NEPA REVIEW: Lessons Learned/Common Errors by Eric Cohen, EH-251, page 8, first bullet, first paragraph.

3. Office of Energy Research, National Environmental Policy Act Handbook, Guidance and Procedures, Section 5.2 Preparation, Memorandum from J. Farley transmitting ER NCO Communication

92-04, Subject: Office of Energy Research Guidance on the Preparation, Scope, and Content of Environmental Assessments, first attachment, Office of Energy Research Guidance on the Preparation, Scope, and Content of Environmental Assessments, page 8, section Avoid Technical Jargon.

4. Reference 2, page 8, first bullet, second paragraph and Reference 3, page 8, section Avoid Technical Jargon.

5. Recommendations for the Preparation of Environmental Assessments and Environmental Impacts Statements, Office of NEPA oversight, U.S. Department of energy, May 1993, page 38, Section 9.4 Objectivity, first bullet; and Reference 2, page 8, third bullet, third paragraph.

6. Reference 2, page 12, first bullet.

7. EA Outline for Congressional-Initiative Grants Prepared by the Department of Energy, Chicago Field Office.

8. Reference 2, page 8, second bullet, first paragraph; and Reference 5, page 38, Section 9.4 Objectivity, fourth bullet.

9. Reference 5, pages 4 and 5, Section 3. Purpose and Need for Action.

10. Reference 2, page 2, first bullet, first paragraph.

11. Reference 5, page 11, Section 4.3 The No Action Alternative, third paragraph.

12. Reference 5, page 7, Section 4.1 The Proposed Action, first bullet.

13. Reference 2, page 5, second bullet.

14. Reference 2, page 8, third bullet, second paragraph.

15. Reference 3, Page 10, Conclusion on "Significance" of Impacts should be in the FONSI, Not in the EA.

16. Reference 2, page 8, second bullet, second paragraph.

17. Reference 2, page 8, second bullet, third paragraph.

18. Reference 3, page 8, section Use Non-Reactor Language.

19. Reference 5, pages 20 - 25, Section 6.2 Human Health Effects.

20. Reference 2, page 10, first full paragraph.

21. Reference 2, page 10, third bullet, first paragraph, and Reference 5, page 34, Section 9.1 Graphics and Data Treatment, fifth bullet.

Attachment 2

ENVIRONMENTAL ASSESSMENTS REVIEWED

1. Biomedical Research Institute - Louisiana State University (DOE/EA- 0789)

2. Atmospheric Radiation Measurement Program - Southern Great Plains, Oklahoma and Kansas (DOE/EA-0680)

3. National Synchrotron Light Source - Brookhaven National Laboratory (DOE/EA-0602)

4. Fermilab Main Injector - Fermi National Accelerator Laboratory (DOE/EA-0543)

5. Next Generation Weather Radar Facility - Brookhaven National Laboratory
(An adopted EA) (DOE/EA-0796)

6. Center for Energy Studies - Arkansas Technical University (DOE/EA-0565)

7. Measurement and Controls Support Facility - Oak Ridge National Laboratory (DOE/EA-0600)

8. West Office Building (Building 2100) - Oak Ridge National Laboratory (DOE/EA-0605)

9. Biomedical Research Facility - Case Western Reserve University - Oak Ridge National Laboratory (DOE/EA-0830)

10. Positron Emissions Tomography (PET) Scanner Facility, Children's Hospital of Michigan (DOE/EA-0795)

11. Solid State Research Facility - Oak Ridge National Laboratory (DOE/EA-0860)

12. Biomedical Isotope Facility - Lawrence Berkeley Laboratory (DOE/EA-0828)